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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/673,270

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Ernst Eberlein

41001

3590

7590

06/23/2004

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EXAMINER

WARE, CICELY Q

ART UNIT

PAPER NUMBER

2634

12

DATE MAILED: 06/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/673,270

Applicant(s)

EBERLEIN ET AL.

Examiner

Cicely Ware

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 February 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 19-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 19-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \*   c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. Regarding claims 19-34, the phrase "of the type" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

#### **a. 2173.05(b) Relative Terminology**

##### **E. "Type"**

The addition of the word "type" to an otherwise definite expression (e.g., Friedel-Crafts catalyst) extends the scope of the expression so as to render it indefinite. *Ex parte Copenhaver*, 109 USPQ 118 (Bd. App. 1955). Likewise, the phrase "ZSM-5-type aluminosilicate zeolites" was held to be indefinite because it was unclear what "type" was intended to convey. The interpretation was made more difficult by the fact that the zeolites defined in the dependent claims were not within the genus of the type of zeolites defined in the independent claim *Ex parte Attig*, 7 USPQ2d 1092 (Bd. Pat. App. & Inter. 1986).

## ***Drawings***

3. This application has been filed with informal drawings, which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 19-32 are rejected under 35 U.S.C. 102(e) as being anticipated by Gledhill et al. (US Patent 5,345,440).

(1) With regard to claim 19, Gledhill et al. discloses a method performing a fine frequency synchronization compensating for a carrier frequency deviation from an oscillator frequency in a multi-carrier demodulation system of the type capable of carrying out a differential phase decoding of multi-carrier modulated signals, said signals comprising a plurality of symbols, each symbol being defined by phase differences between simultaneous carriers having different frequencies, said method comprising the steps of: determining a phase difference between phases of the same carrier in different symbols, determining a frequency offset by eliminating phase shift uncertainties related to the transmitted information from said phase difference making use of a decision device; performing a feedback correction (Fig. 4) of said carrier frequency deviation based on said determined frequency offset (abstract, col. 2, lines 36-43, col. 3, lines 47-49, col. 4, lines 30-36, 64-68, col. 5, lines 1-7, 16-22, 30-35, 37-41, col. 6, lines 54-56, 66-67, col. 8, lines 53-64, col. 9, lines 8-26, 56-62, col. 11, lines 41-49, 55-56, co. 14, lines 54-58, 64-66, col. 15, lines 3-7, 17-24).

(2) With regard to claim 20, claim 20 inherits all the limitations of claim 19.

Gledhill et al. further discloses determining respective phase of the same carrier in different symbols; eliminating phase shift uncertainties related to the transmitted information from said phases to determine respective phase deviations making use of a decision device; determining frequency offset by determining a phase difference between said phase deviations (abstract, col. 2, lines 36-43, col. 3, lines 47-49, col. 6, lines 54-56, col. 8, lines 1-5, col. 11, lines 3-6, 41-49, 55-56).

(3) With regard to claim 21, claim 21 inherits all the limitations of claim 19.

Gledhill et al. further discloses wherein the method is performed for a plurality of carriers in said symbols; an averaged frequency offset is determined by averaging said determined frequency offsets of said plurality of carriers, and said feedback correction of said frequency deviation is performed based on said averaged frequency offset (col. 15, lines 27-29, 36-42, 62-68, col. 16, lines 1-6).

(4) With regard to claim 22, claim 22 inherits all the limitations of claims 20 and 21.

(5) With regard to claim 23, claim 23 inherits all the limitations of claim 19.

Gledhill et al. further discloses the step of determining a phase difference between phases of the same carrier in symbols, which are adjacent in the time axis direction (col. 10, lines 33-34, 54-56, col. 11, lines 3-6).

(6) With regard to claim 24, claim 24 inherits all the limitations of claim 19.

Gledhill et al. further discloses the step of eliminating phase shift uncertainties corresponding to M-ary phase shifts (col. 2, lines 51-68, 1-5, col. 4, lines 30-36).

(7) With regard to claim 25, claim 25 inherits all the limitations of claim 20.

Gledhill et al. further discloses the step of determining respective phases of the same carrier in symbols, which are adjacent in the time axis direction (col. 3, lines 47-49, col. 8, lines 1-5, col. 10, lines 33-34, 54-56, col. 11, lines 3-6).

(8) With regard to claim 26, claim 26 inherits all the limitations of claim 20.

Gledhill et al. further discloses the step of eliminating M-ary phase shifts (col. 2, lines 51-68, 1-5, col. 4, lines 30-36).

(9) With regard to claim 27, claim 27 inherits all the limitations of claim 19.

(10) With regard to claim 28, claim 28 inherits all the limitations of claim 20.

(11) With regard to claim 29, claim 29 inherits all the limitations of claims 27 and 21.

(12) With regard to claim 30, claim 30 inherits all the limitations of claims 28 and 21.

(13) With regard to claim 31, claim 31 inherits all the limitations of claim 27 and 23.

(14) With regard to claim 32, claim 32 inherits all the limitations of claims 28 and 25.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gledhill et al. (US Patent 5,345,440) as applied to claim 27 above, in view of Ahn (US Patent 6,219,333).

(1) With regard to claim 33, claim 33 inherits all the limitations of claim 27.

However Gledhill et al. does not disclose discloses in means for performing a feedback correction of said frequency deviation comprises a numerical controlled oscillator and a complex multiplier.

However Ahn discloses in (Fig. 1) means for performing a feedback correction of said frequency deviation comprises a numerical controlled oscillator and a complex multiplier (col. 3, lines 3-9, col. 4, lines 53-63, col. 8, lines 1-7).

Therefore it would have been obvious to one of ordinary skill in the art to modify Gledhill et al. to incorporate means for performing a feedback correction of said frequency deviation comprises a numerical controlled oscillator and a complex multiplier in order to successfully synchronize the carrier frequency even when the offset of the carrier frequency is above the bandwidth of one sub-channel (Ahn, col. 2, lines 5-8

(2 With regard to claim 34, claim 34 inherits all the limitations of claim 33. Ahn further discloses in (Fig. 1(106, 108)) performing a feedback correction of said frequency deviation further comprises a low path filter preceding said numerical controlled oscillator.

***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cicely Ware whose telephone number is 703-305-8326. The examiner can normally be reached on Monday – Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

***Cicely Ware***

cqw  
June 3, 2004



**STEPHEN CHIN  
SUPERVISORY PATENT EXAMINE  
TECHNOLOGY CENTER 2800**